

34. (Amended) An apparatus for applying energy through a skin epidermis surface of an underlying subcutaneous layer or deeper soft tissue layers that includes collagen containing tissue, comprising:
a membrane that conforms a contacting exterior surface of the membrane to the skin epidermis surface;
one or more electrodes positioned in the membrane configured to be coupled to an energy source;
an electrolytic medium positioned in the membrane ^{and} coupled to the electrodes to receive energy from the electrodes and transfer energy from the electrodes to the skin epidermis surface;
a focussing element coupled to the membrane, which creates a reverse thermal gradient from the skin epidermis surface to the collagen containing tissue.

33. (Amended) An apparatus for applying energy through a skin epidermis surface to an underlying collagen containing tissue; comprising:
an energy delivery device means;
electrolytic medium energy delivery means coupled to the energy delivery device means to receive electrolytic energy and transfer the electrolytic energy from the energy delivery device means to the skin surface;
the electrolytic medium means delivering energy to the skin surface and the energy passing through the skin surface to the underlying collagen containing tissue to contract at least a portion of the collagen containing tissue without substantial cell necrosis and creating a tightening of the skin surface;
and
a membrane housing means housing at least a portion of the energy delivery means, the membrane means including a membrane skin surface interface means.

REMARKS

This Amendment is in response to the Examiner's Office Action mailed March 21, 2001. Claims 6, and 23-29 are canceled. Claims 1, 11, 31, and 33-34 are amended. Claims 1-5, 7-22 and 30-35 are now pending in view of the above amendments.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

Reconsideration of the application is respectfully requested in view of the above amendments to the claims and the following remarks. For the Examiner's convenience and reference, Applicants' remarks are presented in the order which the corresponding issues were raised in the Office Action.

I. Claim Objections

Claims 9 and 10 are objected to under 37 C.F.R. §1.75 as being a substantial duplicate of claims 26 and 27; and Claims 11 and 12 are objected to under 37 C.F.R. §1.75 as being a substantial duplicate of claims 28 and 29. Applicants cancel claims ³27-29.

Claim 28 is objected to for being informal. Applicants cancel claim 28.

Claims 31 and 34 are objected to because of the informalities "int he" which should have been "in the". Applicants amended claims 31 and 34 to cure these editorial defects.

II. Obviousness-Type Double Patenting

Claim 30 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 5,919,219. Pursuant to 37 C.F.R. §1.321(c) Applicants submit herewith a terminal disclaimer to overcome this rejection. Withdrawal of this ground of rejection is therefore respectfully requested.

III. Rejections under 35 U.S.C. '112

Claims 1-12, 28 and 34 are rejected under 35 U.S.C. '112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, claim 1 is rejected for lacking sufficient antecedent basis for the limitation "the membrane". Applicants amend claim 1 to replace "the membrane" with "the fluid delivery member".

Claims 11 and 28 are rejected for lacking sufficient antecedent basis for the limitation "device". Applicants cancel claim 28 and amend claim 11 to replace "device" with "member" as suggested by the Examiner.

Claim 34 is rejected for omitting structural cooperative relationships of the element "the focussing element". Applicants amend claim 34 to specify that the "focussing element" is coupled to the membrane.

Applicants believe that these amendments render claims 1-12, 28, and 34 sufficiently definite under 35 U.S.C. '112, second paragraph. Withdrawal of this ground of rejection is therefore respectfully requested.

IV. Rejections under 35 U.S.C. '102

Claims 1, 3, 6, 9-12 and 26-29 are rejected under 35 U.S.C. '102(b) as being anticipated by Vaguine et al. (US Patent No. 4,556,070).

Applicants cancel claims 6 and 26-29 and amend independent claim 1 to include the element "a fluid passage lumen coupled to the fluid delivery member". As a result, claim 1 as amended is the same as claim 23 which depends on claim 1 and is cancelled in favor of the amended claim 1.

As the Examiner states in the Office Action, claims 23-25 are allowable if rewritten in independent form including all of the limitations of the base claim, i.e., claim 1. The Office Action, page 6, lines 8-10. Since independent claim 1 as amended is the same as dependent claim 23 as originally filed, claims 1, 3, and 9-12 are allowable under 35 U.S.C. '102(b). Withdrawal of this ground of rejection and allowance of the pending claims are therefore respectfully requested.

V. Rejections under 35 U.S.C. '103(a)

Claims 5 is rejected under 35 U.S.C. '103(a) as being unpatentable over Vaguine et al. in view of Weiss (US Patent No. 5,507,790).

As discussed in detail above in response to rejection under 35 U.S.C. '103(a), independent claim 1 as amended is the same as dependent claim 23 which is found allowable by the Examiner. Consequently, dependent claim 5 should be allowable under 35 U.S.C. '103(a). Withdrawal of this ground of rejection and allowance of claim 5 are therefore respectfully requested.

CONCLUSION

In light of the Amendments and the arguments set forth above, Applicants earnestly believe that they are entitled to a letters patent, and respectfully solicit the Examiner to expedite prosecution of this patent application to issuance. Should the Examiner have any questions, the Examiner is encouraged to telephone the undersigned.

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The Commissioner is authorized to charge any fees which may be required, including petition fees and extension of time fees for a small entity, to Deposit Account No. 23-2415 (Docket No. 16904-738).

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Please amend the following claims:

1. (Amended) A skin treatment apparatus, comprising:
 - a fluid delivery member with a tissue interface surface that remains conformable to a skin surface as the tissue interface surface is applied to a surface of the skin;
 - a fluid passage lumen coupled to the fluid delivery member; and
 - a thermal energy delivery device coupled to the [membrane] fluid delivery member in a position to transfer thermal energy to an electrolytic [media] medium that passes through the fluid delivery member.
11. (Amended) The apparatus of claim 10, wherein the sensor is positioned at the tissue interface surface of the fluid delivery [device] member.
13. (Amended) An apparatus for treating a skin surface, comprising:
 - a fluid receiving member;
 - a thermal energy delivery device coupled to the fluid receiving member;
 - an electrolytic [media] medium positionable in the fluid receiving member, the thermal energy delivery device being positioned in the fluid receiving member to transfer thermal energy to the electrolytic [media] medium, wherein a selected collagen containing tissue site under the skin surface receives the thermal energy and creates a tightening of the skin surface.external surface of the skin; and
 - tightening at least a portion of the external surface of the skin.
31. (Amended) A method for tightening skin, comprising:
 - providing a thermal energy delivery device;
 - positioning an energy delivery surface of the thermal energy delivery device on an external surface of the skin;
 - creating a reverse thermal gradient through a surface of the skin while heating underlying collagen containing tissue, wherein a temperature of the external skin surface is lower than a temperature of the underlying collagen containing tissue;

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heating the underlying collagen containing tissue without creating a necrosis of living cells [int he] in the epidermis;

contracting at least a portion of the collagen containing tissue; and
tightening at least a portion of the surface of the skin.

33. (Amended) A method for tightening skin, comprising:

providing a thermal energy delivery device;

positioning an energy delivery surface of the thermal energy delivery device on a external surface of the skin;

heating through a surface of the skin the collagen containing tissue underlying the surface of the skin, wherein a temperature of the external skin surface is lower than a temperature of the underlying collagen containing tissue; and

controlling a delivery of a sufficient amount of thermal energy through an epidermis of the surface of the skin to reconfigure at least a portion of an underlying collagen containing tissue without substantially creating cell necrosis in the collagen containing tissue, wherein at least a portion of the surface of the skin is tightened.

34. (Amended) An apparatus for applying energy through a skin epidermis surface of an underlying subcutaneous layer or deeper soft tissue layers that includes collagen containing tissue, comprising:

a membrane that conforms a contacting exterior surface of the membrane to the skin epidermis surface;

one or more electrodes positioned [int he] in the membrane configured to be coupled to an energy source;

an electrolytic [media] medium positioned in the membrane ^{and} coupled to the electrodes to receive energy from the electrodes and transfer energy from the electrodes to the skin epidermis surface;

a focussing element [that] coupled to the membrane, which creates a reverse thermal gradient from the skin epidermis surface to the collagen containing tissue.

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35. (Amended) An apparatus for applying energy through a skin epidermis surface to an underlying collagen containing tissue; comprising:

an energy delivery device means;

electrolytic [media] medium energy delivery means coupled to the energy delivery device means to receive electrolytic energy and transfer the electrolytic energy from the energy delivery device means to the skin surface;

the electrolytic [media] medium means delivering energy to the skin surface and the energy passing through the skin surface to the underlying collagen containing tissue to contract at least a portion of the collagen containing tissue without substantial cell necrosis and creating a tightening of the skin surface; and

a membrane housing means housing at least a portion of the energy delivery means, the membrane means including a membrane skin surface interface means.

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